

REMARKS

Claims 1-82 are all the claims pending in the application. Claims 72-75 and 77-82 are allowed. Claims 1-71 and 76 have been examined.

PRELIMINARY MATTERS:

Applicant thanks the Examiner for acknowledging the claim for priority and confirming receipt of the priority document. Applicant also thanks the Examiner for considering the references submitted with the Information Disclosure Statements filed on January 5, 2000; June 11, 2002; and December 16, 2002.

CLAIM OBJECTIONS:

Claims 9, 21, 32, 33, 45, 57 and 69 are objected to because of alleged informalities. Applicant respectfully traverses the objection and submits that the amended claims resolve the issues raised by the Examiner. Withdrawal of the objection is respectfully requested.

35 U.S.C. §112:

Claims 3-11, 14-23, 27-35, 39-47, 50-59, 63-71 and 76 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant respectfully traverses this rejection. The claims are amended to overcome the rejection under 35 U.S.C. §112, second

paragraph. These amendments are made for clarification of language and not because of applied prior art. Withdrawal of the rejection is respectfully requested.

35 U.S.C. §103:

Claims 1, 2, 12-14, 24-26, 36-38, 48-50, 60-62 and 72 are rejected under 35 U.S.C. §103(a) as being unpatentable over von Gutfeld et al. (U.S. Patent 6,181,408 [hereinafter "Gutfeld"])). Applicant respectfully traverses this rejection in view of the following remarks.

To establish a *prima facie* case of obviousness, it must be shown that the prior art would have taught or suggested all of the claimed features. (See MPEP §2143.) Applicant respectfully submits that the applied reference would have failed to teach or suggest all of the claimed features as set forth in the present application.

The present invention is directed to a novel combination of elements that form new and unobvious methods for fabricating a display panel. The features of the claims are neither disclosed nor rendered obvious by Gutfeld. Gutfeld discloses a tool for enhancing a speed at which display panels are filled with liquid crystal material. This would not have taught or suggested all of the claimed features.

For example, and not by limitation, the present invention discloses multiple steps and procedures, as represented in Figs. 11A and 11B. The manufacturing steps are carried out to effectively manipulate a number of display panels in the respective steps. The claimed steps are

not limited to just providing liquid crystal material in a display. The prior art suffers from an inefficient manipulation of the display panels. (See Description of Related Art.)

The Examiner acknowledges that Gutfeld does not disclose the claimed feature regarding the amount of panels to be processed in the recited steps. Thus, the Examiner alleges that it would be a matter of design choice to provide a number of display panels in one step to be greater than that of the another step. Applicant respectfully asserts that the claimed features are not a matter of design choice, and are not taught or suggested by Gutfeld. This is because the prior art must provide a motivation or reason for one skilled in the art, without the benefit of Applicant's specification, to make the necessary changes in the reference's disclosure. (See MPEP §2144.04(VI)(c).) Gutfeld does not provide this motivation because inserting liquid crystal into a panel, as disclosed in Gutfeld, would not have taught one skilled in the art to manipulate a number of display panels, as described in the claims.

Consequently, it is submitted that independent claims 1, 13, 25, 37, 49 and 61 are patentable over Gutfeld, and the rejection of these claims under 35 U.S.C. §103(a) should be withdrawn. Dependent claims 2, 12, 14, 24, 26, 36, 38, 48, 50, 60, 62 and 72 are also patentable over Gutfeld, at least by virtue of them being respectively dependent on the independent claims, in addition to their individual recitations.

In view of the preceding amendments and remarks, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby earnestly solicited. If

AMENDMENT UNDER 37 C.F.R. §1.111
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Art Unit 2879
Q57471

any points remain in issue that the Examiner feels may be best resolved through a personal or telephonic interview, the Examiner is kindly requested to contact the undersigned attorney at the local telephone number listed below.

The USPTO is directed and authorized to charge all required fees (except the Issue Fee and/or the Publication Fee) to our Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

A handwritten signature in cursive script, reading "Daniel V. Williams", written in black ink.

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Date: April 22, 2003

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A method of fabricating a display panel, comprising a first step and a second step, said first step is [which is to be] carried out immediately before said [first] second step,

said [first] second step taking a longer time to be carried out per a display panel than that of said [second] first step,

the number of display panels to be processed in said [first] second step being greater than the number of display panels to be processed in said [second] first step.

2. (Amended) The method as set forth in claim 1, wherein said [first] second step includes [the] a relocation step of relocating display panels [into] from a first cassette used in said first step [from] to a second cassette used in said second step in [the] a greater number than the number of display panels having been processed in said [second] first step.

3. (Amended) The method as set forth in claim 2, wherein said relocation step includes the steps of:

(a) upwardly taking a display panel out of [a] said first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above [a] said second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

6. (Amended) The method as set forth in claim 3, wherein said step (a) further includes the steps of:

(a1) transferring [a] said first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station; and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring [a] said second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

8. (Amended) The method as set forth in claim 3, further comprising [the] a step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

9. (Amended) The method as set forth in claim 3, further comprising [the] a step [(f)] (e) of rotating said first cassette in a horizontal plane by 90 degrees, said step (e) [(f)] being to be carried out before or after said step (a).

12. (Amended) The method as set forth in claim 1, wherein said [first] second step is a step of introducing liquid crystal into a space formed between two substrates.

13. (Amended) A method of fabricating a display panel, comprising a first step and a second step which is to be carried out immediately after said first step,

said first step taking a longer time to be carried out per a display panel than that of said second step,

the number of display panels to be processed in said first step being greater than the number of display panels to be processed in said second step.

14. (Amended) The method as set forth in claim 13, wherein said first step includes the relocation step of relocating display panels [into] from a first cassette used in said first step [from] to a second cassette used in said second step in the smaller number than the number of display panels having been processed in said first step.

15. (Amended) The method as set forth in claim 14, wherein said relocation step includes the steps of:

(a) upwardly taking a display panel out of [a] said first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above [a] said second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

18. (Amended) The method as set forth in claim 15, wherein said step (a) further includes the steps of:

(a1) transferring [a] said first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station; and

(a3) transferring said first cassette out of said first station;
and wherein said step (d) further includes the steps of:
(d1) transferring [a] said second cassette including no display panels into a second station;
(d2) introducing display panels into said second cassette; and
(d3) transferring said second cassette out of said second station.

20. (Amended) The method as set forth in claim 15, further comprising a [the] step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

21. (Amended) The method as set forth in claim 15, further comprising a [the] step (e) [(f)] of rotating said first cassette in a horizontal plane by 90 degrees, said step (e) [(f)] being to be carried out before or after said step (a).

25. (Amended) A method of fabricating a display panel, comprising a first step, a second step which is to be carried out immediately [before] after said first step, and a third step which is to be carried out immediately after said second [first] step,

said [first] second step taking a longer time to be carried out per a display panel than those of said [second] first and [third] second steps,

the number of display panels to be processed in said [first] second step being greater than both the number of display panels to be processed in said [second] first step and the number of display panels to be processed in said third step.

26. (Amended) The method as set forth in claim 25, wherein said [first] second step includes [the] a first relocation step of relocating display panels [into] from a first cassette used in said first step to [from] a second cassette used in said second step in [the] a greater number than the number of display panels having been processed in said [second] first step, and [the] a second relocation step of relocating display panels from said [first] second cassette into a third cassette used in said third step in the smaller number than the number of display panels having been processed in said [first] second step.

27. (Amended) The method as set forth in claim 26, wherein each of said first and second relocation steps includes the steps of:

(a) upwardly taking a display panel out of [a] said first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above [a] said second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

28. (Amended) The method as set forth in claim [25] 27, wherein said step (a) further includes the step of compensating for a pitch at an upper edge of said display panel when said display panel is supported at said upper edge thereof.

29. (Amended) The method as set forth in claim [25] 27, wherein said step (a) further includes the step of compensating for a pitch at a side edge of said display panel when said display panel is supported at said side edge thereof.

30. (Amended) The method as set forth in claim [25] 27, wherein said step (a) further includes the steps of:

(a1) transferring [a] said first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station; and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring [a] said second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

32. (Amended) The method as set forth in claim [25] 27, further comprising [the] a step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

33. (Amended) The method as set forth in claim [25] 27, further comprising [the] a step (e) [(f)] of rotating said first cassette in a horizontal plane by 90 degrees, said step (e) [(f)] being to be carried out before or after said step (a).

34. (Amended) The method as set forth in claim [25] 26, wherein said first and second cassettes have the same size.

36. (Amended) The method as set forth in claim 25, wherein said [first] second step is a step of introducing liquid crystal into a space formed between two substrates.

37. (Amended) A method of fabricating a display panel, comprising a first step and a second step [which is to be], said first step carried out immediately before said [first] second step,

said [first] second step taking a longer time to be carried out per a display panel than that of said [second] first step,

the number of display panels to be processed in said [first] second step being greater than the number of display panels having been processed in said [second] first step.

38. (Amended) The method as set forth in claim 37, wherein said [first] second step includes [the] a relocation step of relocating display panels [into] from a first cassette used in said first step [from] to a second cassette used in said second step in [the] a greater number than the number of display panels having been processed in said [second] first step.

39. (Amended) The method as set forth in claim 38, wherein said relocation step includes the steps of:

(a) upwardly taking a display panel out of [a] said first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above [a] said second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

42. (Amended) The method as set forth in claim 39, wherein said step (a) further includes the steps of:

- (a1) transferring [a] said first cassette including display panels, into a first station;
- (a2) taking said display panels out of said first cassette in said first station; and
- (a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

- (d1) transferring [a] said second cassette including no display panels into a second station;
- (d2) introducing display panels into said second cassette; and
- (d3) transferring said second cassette out of said second station.

44. (Amended) The method as set forth in claim 39, further comprising [the] a step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

45. (Amended) The method as set forth in claim 39, further comprising [the] a step [(f)] (e) of rotating said first cassette in a horizontal plane by 90 degrees, said step [(f)] (e) being to be carried out before or after said step (a).

48. (Amended) The method as set forth in claim 37, wherein said [first] second step is a step of introducing liquid crystal into a space formed between two substrates.

49. (Amended) A method of fabricating a display panel, comprising a first step and a second step which is to be carried out immediately after said first step,

said first step taking a longer time to be carried out per a display panel than that of said second step,

the number of display panels to be processed in said first step being greater than the number of display panels to be introduced into said second step.

50. (Amended) The method as set forth in claim 49, wherein said first step includes the relocation step of relocating display panels [into] from a first cassette used in said first step [from] to a second cassette used in said second step in the smaller number than the number of display panels having been processed in said first step.

51. (Amended) The method as set forth in claim 50, wherein said relocation step includes the steps of:

(a) upwardly taking a display panel out of [a] said first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above [a] said second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

54. (Amended) The method as set forth in claim 51, wherein said step (a) further includes the steps of:

(a1) transferring [a] said first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station; and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring [a] said second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

56. (Amended) The method as set forth in claim 51, further comprising [the] a step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

57. (Amended) The method as set forth in claim 51, further comprising [the] a step (e) [(f)] of rotating said first cassette in a horizontal plane by 90 degrees, said step [(f)] (e) being to be carried out before or after said step (a).

61. (Amended) A method of fabricating a display panel, comprising a first step, a second step which is to be carried out immediately [before] after said first step, and a third step which is to be carried out immediately after said [first] second step,

said [first] second step taking a longer time to be carried out per a display panel than those of said [second] first and [third] second steps,

the number of display panels to be processed in said [first] second step being greater than both the number of display panels having been processed in said [second] first step and the number of display panels to be introduced into said third step.

62. (Amended) The method as set forth in claim 61, wherein said [first] second step includes [the] a first relocation step of relocating display panels [into] from a first cassette used in said first step [from] to a second cassette used in said second step in [the] a greater number

than the number of display panels having been processed in said [second] first step, and [the] a second relocation step of relocating display panels from said [first] second cassette into a third cassette used in said third step in the smaller number than the number of display panels having been processed in said [first] second step.

63. (Amended) The method as set forth in claim 62, wherein each of said first and second relocation steps includes the steps of:

(a) upwardly taking a display panel out of [a] said first cassette in which display panels are stored, with said display panel being supported at upper and lower edges thereof;

(b) supporting said display panel taken out of said first cassette, at lower and side edges thereof;

(c) laterally transferring said display panel from a position above said first cassette to a position above [a] said second cassette; and

(d) supporting said display panel at upper and side edges thereof and lowering said display panel into said second cassette.

66. (Amended) The method as set forth in claim 63, wherein said step (a) further includes the steps of:

(a1) transferring [a] said first cassette including display panels, into a first station;

(a2) taking said display panels out of said first cassette in said first station; and

(a3) transferring said first cassette out of said first station;

and wherein said step (d) further includes the steps of:

(d1) transferring [a] said second cassette including no display panels into a second station;

(d2) introducing display panels into said second cassette; and

(d3) transferring said second cassette out of said second station.

68. (Amended) The method as set forth in claim 63, further comprising [the] a step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

69. (Amended) The method as set forth in claim 63, further comprising [the] a step [(f)] (e) of rotating said first cassette in a horizontal plane by 90 degrees, said step [(f)] (e) being to be carried out before or after said step (a).

72. (Amended) The method as set forth in claim 61, wherein said [first] second step is a step of introducing liquid crystal into a space formed between two substrates.

76. (Amended) The method as set forth in claim 73, wherein said step (a) further includes the steps of:

- (a1) transferring [a] said first cassette including display panels, into a first station;
 - (a2) taking said display panels out of said first cassette in said first station; and
 - (a3) transferring said first cassette out of said first station;
- and wherein said step (d) further includes the steps of:
- (d1) transferring [a] said second cassette including no display panels into a second station;
 - (d2) introducing display panels into said second cassette; and
 - (d3) transferring said second cassette out of said second station.

78. (Amended) The method as set forth in claim 73, further comprising [the] a step (e) of rotating said second cassette in a horizontal plane by 90 degrees, said step (e) being to be carried out before or after said step (d).

79. (Amended) The method as set forth in claim 73, further comprising the step [(f)] (e) of rotating said first cassette in a horizontal plane by 90 degrees, said step [(f)] (e) being to be carried out before or after said step (a).